African Journal of Business Management Vol.5 (10), pp. 3828-3833, 18 May 2011
Available online at http://www.academicjournals.org/AJBM
DOI: 10.5897/AJBM10.781
ISSN 1993-8233 ©2011 Academic Journals

Full Length Research Paper

Novel performance modelling in small and medium-sized enterprises in the pistachio industry

Shahryar Sorooshian[1], Norzima Zulkifli[2], Yusof Ismail[3], and Rosnah Yusuff[2]

[1]Department of Industrial Engineering, Science and Research Branch, Islamic Azad University- Kerman- Iran.
[2]Department of Mechanical and Manufacturing Engineering, University Putra, Malaysia.
[3]Department of Manufacturing Engineering, University Malaysia Pahang, Malaysia.

Accepted 31 December, 2010

Among middle east non-oil paramount issues one can refer to pistachio production and its processing industry; Base on this fact, this study attempted to identify the major influences in enhancing success of Middle-East small and medium pistachio processing enterprises, according to their entrepreneur's strategic perception (ESP) and their entrepreneur's background (EB). This research tries to fill the gap of management science empirical researches in small and medium industries, especially pistachio industry. Four concepts of EB, ESP, Entrepreneur's strategy-making activities (ESMA) and performance of small and medium pistachio industry (SMPI) build the prepared empirical model. Modeling and analysis of data performed by using AMOS software, this structural equation model indicated there was a strong association between EB, ESP and Middle East SMPI performance. The model reviewed both direct and indirect effects of the defined variables of the concepts.

Key words: small and medium enterprise (SME), manager's capability, entrepreneur's background (EB), entrepreneur's strategic perception (ESP), entrepreneur's strategy-making activities (ESMA), performance.

INTRODUCTION

It is generally a matter of debate that empirical surveys are not adequate in taking into account small and medium enterprises (Barnes, 2002; Metts, 2007),though SMEs are so important for economics and development (Ebrahim et al., 2009; Ghaderi, et al., 2010); Moreover, there are a small number of empirical researches focused on understanding the impact of managerial background and perception on performance and the degree to which smaller firms are affected by the strategy awareness of entrepreneurs (Karami et al., 2006).

The current research addresses the shortfall in empirical research on several issues. In this research, firstly, a new perspective to the efficiency of managerial background and perception in SMEs has been suggested. Secondly, this research provides an inclusive strategy-making structure which is examined and validated to be employed by other researchers. Thirdly, the present research offers further outlook into the background of entrepreneurs and their understandings of strategic management. And finally, the researcher attempts to generate a structural equation model for success in analyzing Middle-East pistachio industry which would be the first tool established in this area. With a general outlook to the previous literature, this research is one of the pioneer researches on pistachio industry management (Sorooshian, 2008). The study intended to address the following question: 'How the achievements of a SMPI could be affected by EB and ESP?' Three key concerns of management have put emphasis on manager's capability, manager's act and manager's achievement.

Manager's capability, is known as a measure which focuses on managers' background and their strategic perception (Analoui and Karami, 2002). It has been noted that a high degree of management skill can be evaluated in various concepts of managerial qualities and

*Corresponding author.E-mail:sorooshian@gmail.com.

awareness including skills, education, experiences, aspects of entrepreneurship and creativity, and capabilities (Analoui et al., 2000; Hambrick and Mason, 1984; Karami, et al., 2006; Leonidouet al., 1998);. Additionally, some studies introduced strategic awareness of entrepreneurs as one of key measures of entrepreneur's perception (Analoui and Karami, 2002; Karami, 2005; Karami, et al., 2006).

Manager's act is actually a measure which emphasizes on activities and performances of managers which are assumed to enhance the success of a given organization (Ghosh, 2005; Irfan et al., 2009; Kao and Hung, 2007; I Koohi, 2008; Metts, 2008; Odiorne, 1987; Rajgopal et al., 2002; Toegel and Conger, 2003; WEBB and LUFT, 2004).

Manager's achievement, is considered as a measure of achievement that mainly is described as the performance of company (Cornell, 2003; Karami, 2005; Metts, 2007, 2008; Woo and Willard, 1983); This approach, for the most part, is based on reliable outcome-based measure of SME's performance, namely, financial result (Metts, 2007, 2008). The researchers assume that the financial understandings only give respect to the association between stated financial aims and other aims (Colak, 2010; Koohi, 2008). In the following discussion with the intention of pursuing the mentioned three streams, the studies discuss the theoretical framework in assessing the efficiency of managerial capabilities and managerial performance. The offered framework is capable of identifying direct and indirect effects of EB, ESP and entrepreneur's performance on their enterprise success, and further exploring the correlation among four concepts of EB, ESP, ESMA and performance.

Entrepreneur's background (EB)

The first approach to the EB is work experience background ; the entrepreneurs with skilful work experiences, technical experience, and product knowledge, have been linked to small industry achievement (Karami et al., 2006; Ruzzier et al., 2007). A recent study declares that entrepreneurs who have more managerial work experience are more likely to place further emphasis on strategy development comparing to those who do not have the experience (Karami et al., 2006). Some believe that having professional skill in management field, particularly in strategy setting, is of great significance (Karami et al., 2006; Ruzzier et al., 2007).

The second approach to the EB is educational background of the business entrepreneur. Formal educational degree, besides, the kind of education offers several measure of proficiency base (Alam, 2009; Hitt and Tyler, 1991; Karami et al., 2006; Norburn and Birley, 1988) and Karami (2006) demonstrated that in dealing with complicated problems, entrepreneurs who have higher levels of business education degree are more likely to make much better strategic explanations.

Entrepreneur's strategic perception (ESP)

In the research, entrepreneur's strategic awareness generates a basic term of ESP and simultaneously can be influenced by the educational background and work experiences of entrepreneurs (Karami 2005; Karami et al., 2006). Chan and Foster, Karami, and Oregan researches on association between entrepreneurs' strategic awareness and strategy-making activities in a SME, provide evidences in lack of both internal and external environmental awareness of manager, awareness to management training and providing strategic management system; yet the mentioned studies do not highlight the strategic planning (Chan and Foster, 2001; Karami, 2005; Karami et al., 2006; I Koohi, 2008; O'Regan et al., 2008).

Entrepreneur's strategy-making activities (ESMA)

The second and central focus of the present study's theoretical framework is ESMA. Besides, ESMA offers environmental analyzing and manufacturing strategy. The benefit of this manner of categorizing is that rationality approach and assertiveness approaches, as two comprehensive approach of ESMA, are simultaneously taken into account. The most current school of rationality approach is greatly thankful to an organizational environmental characterized in which strategy can be looked upon as the result of an adaptive ability of SMEs (Mintzberg, 1994).

With reference to rapid environmental alteration, more attention should be paid to SME's environmental characterized in the strategies (Koohi, 2010). Different facets of environmental analyzing consist of customers and competitors, supply of labour and funds, social or political, and internal factors and resources (Metts, 2007; Muhammad et al., 2009). Assertiveness, the subsequent perspective of ESMA, describes the degree of entrepreneurs risk taking and their decisions reactiveness (Mintzberg, 1994). The small and medium manufacturing enterprises maintain their activities under the restrictions of the quality, price, time, raw materials and delivery.

Therefore, before starting production steps, determining where and how production will be carried out and what is going to be produced, the amount of the goods to be produced, and the costs and time of production, is undoubtedly important (Colak, 2010). Elements of manufacturing strategy is operationalized into four manufacturing essentials; cost, quality, flexibility and delivery (Metts, 2007).

Performance

Dependent variable of the current research is performance. The theorists in management field chiefly determine the efficiency and organizational success based on three kinds of approaches; the goal-based

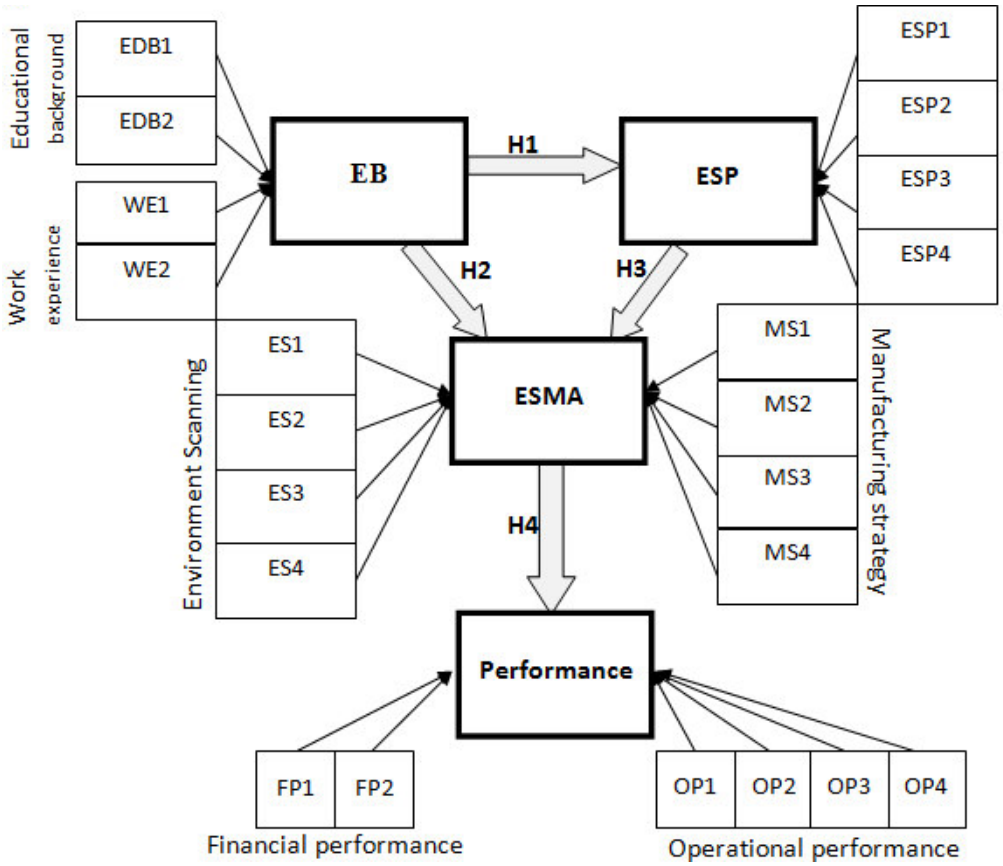

Figure 1. Structural basic model (adapted from Sorooshian (2010).

(Etzioni, 1964), the systematic (Steers, 1975) and the constituency approach (Zammuto, 1984). Considering these approaches toward firm performance, metrics of performance should not only be able to financial check but also they need to be able for checking operational performance (Metts, 2007, 2008). The structure of the present research consists of financial and operational performance which includes six metrics.

Research model improvement

As the objective of this research, the studies try to probe:

1. The correlation between EB, ESP and ESMA in SMEs.
2. The effects of EB, ESP and ESMA upon performance of SME.

Based on the literature and due to the research objectives, the studies propose four hypotheses:

H_1: As the level of EB enrich, the level of ESP will enrich.

H_2: As the level of EB enrich, the level of ESMA will enrich.

H_3: As the level of ESP enrich, the level of ESMA will enrich.

H_4: As the level of ESMA enrich, the level of organizational performance will enrich.

Figure 1 and Table 1 present the structural research model regarding the study research objectives and hypothesis. The hypothesized model has the ability to measure the direct and indirect effects of EB and ESP on organizational performance.

METHODOLOGY

Food and Agriculture Organization of the United Nations (F.A.O., 2007) stated that Middle-East produce more than 50% of the worldwide pistachio. The sample frame utilized pistachio processing firms with less than 250 employees. The named standard has commonly been referred in previous studies in describing manufacturing SMEs (Analoui and Karami, 2003; Karami et al., 2006). Although the majority of the firms were found in Iran, a small sample from other countries such as Syria, and Pakistan were participated in the study. The mentioned countries are among first 20 enormous producers which process near half of the world pistachio (F.A.O., 2007).

With the intention of testing the hypotheses, a random sample of

Table 1. Variables and measurement items.

Variables	Cronbach alpha	Measurement Item	Code
EB	0.6823	Technical work experience	WE1
		Managerial work experience	WE2
		Educational level	EDB1
		Educational field	EDB2
ESP	0. 6408	environmental (Internal) awareness of the entrepreneur	ESP1
		environmental (external) awareness of the entrepreneur	ESP2
		perception toward management training	ESP3
		Perception toward establishing strategic management system	ESP4
ESMA	0.6729	Competition prices	ES1
		Competition's introduction of new products	
		Competition's advertising/promotion programs	
		New product characteristics	
		Customer's buying habits	
		Customer's product process	
		Customer's demand and desires	
		Availability of external financing	ES2
		Availability of labour	
		New manufacturing technology	
		Company's sales capabilities and resources	ES3
		Company's financial capabilities and resources	
		Company's management capabilities and resources	
		Local/national/global social conditions	ES4
		Local/national/global political conditions	
		Local/national/global economical conditions	
Performance	0.7389	Statistical process control	MS1
		Real-time process control	
		Updating process equipment	
		Developing process for production programs	
		Reduce inventory	MS2
		Increase capacity utilization	
		Increase equipment utilization	
		Reduce production costs	
		Lead-time reduction	MS3
		Set-up time reduction	
		Ability to change machine assignments on the shop floor	
		Ability to change priorities of job on the shop floor	
		Provide fast deliveries	MS4
		Meet delivery promises	
	0.8736	Average return on assets over the last three years	FP1
		Average per cent change in sales over last three years	FP2
	0.7208	Quality of product(meet customer specification)	OP1
		Ability to quickly change production volumes	OP2
		On-time ability performance	OP3
		Customer satisfaction	OP4

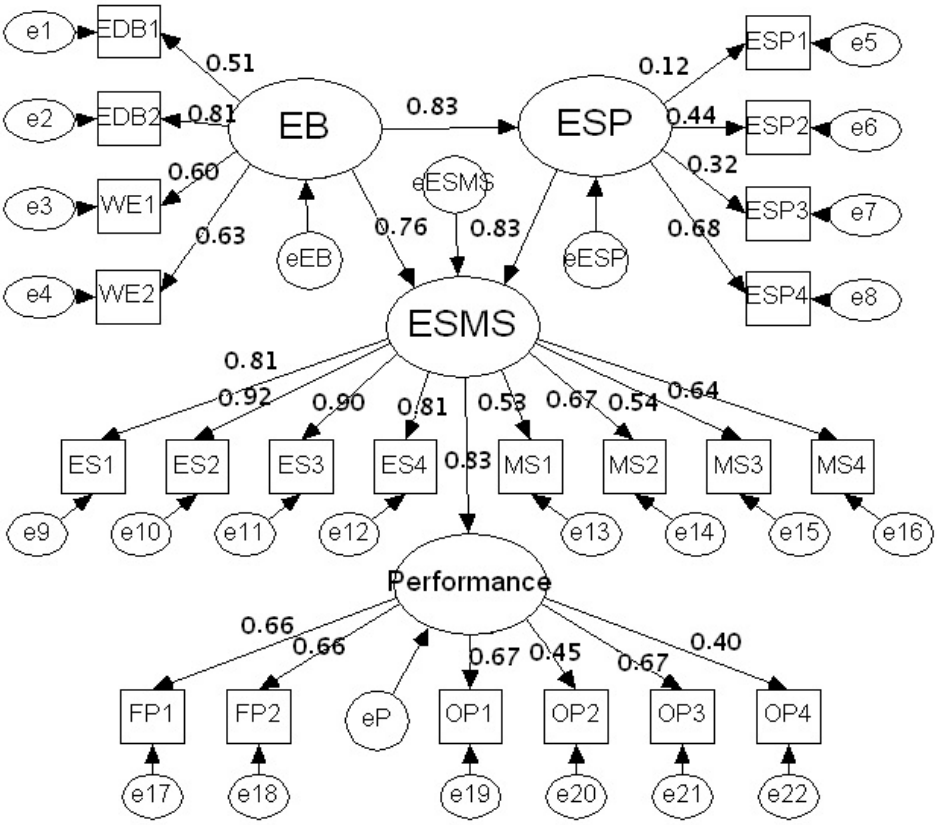

Figure 2. Stractural equation model.

997 entrepreneur has been selected and the data was collected by means of a postal survey. The questioners of this study addressed the entrepreneur of firm who were chosen at random from list of pistachio SMIs of Iran, reported by Industrial Park Organization of Iran (I.P.O, 2010) and list of other Middle-East SMPIs (AnjomShoa, 2010). The research was started on first months of 2010 and approximately took four months for different phases of the data collection process; in the period, central research office was in Kerman, Iran. Finally, from the accomplished surveys, 137 completed ones were returned; among them 26 were female and the rest were male. Out of all the subjects, 21 employed less than between 50 and 250 employees and the others had less than 50 employees.

The reliability of the measured variable and latent variables are proved by Cronbach alpha (Collins, 2010). The findings have been given in Table 1. As pre-analyzing step, the researchers estimated the linearity and normality of the data before mean substitution, to assure the assumptions of the multivariate procedures employed for confirmatory analysis and model testing. Scatter plots have been used to evaluate linearity, and likewise, normal Q-Q plots have been utilized for estimating univariate normality. These evaluations provide evidences that the data is linear and univariate normal (Koziol, 1993). In order to investigate the confirmatory factor analysis and examine the unidimensionality of each construct, structural equation modelling (SEM) was utilized. While, SEM consists of a set of linear equations which at the same time examine two or more correlation among directly noticeable and unmeasured latent variables (Shook et al., 2004). All SEM analysis was accomplished while employing version 16 of AMOS SEM software.

RESULTS AND CONCLUSION

The findings of this study offered support for conceptualizing the human capital of a SMI's entrepreneur with regards to the factors of ESP, EB, ESMA and firm's performance. Additionally, the results demonstrated that the entrepreneur's capital is directly and positively associated with the degree of SMEs' success. Furthermore, the researchers noticed direct relationships among individual dimensions of features of the SMPI's entrepreneur, ESMA and firm's performance. The found structural equation model (Figure 2) shows that the latent constructs of EB and ESP can best define the success of the firm.

The hypotheses of this study were supported by founded model which concerning the characteristics (entrepreneur's background and strategic perception) of entrepreneurs propose that the entrepreneurs achieve more success through EB and ESP. Moreover, the model suggested an association between background of entrepreneur and his perception (strategy awareness). Likewise, the offered model supported the idea that the entrepreneur's characteristics (contain both ESP and EB) is related to strategy-making activities in SMPIs.

This research was limited in some ways. The sample

was from Middle–East SMPIs and may not be representative of other regions or other industries. We focused on manufacturing SMEs, so the finding may or may not prove meaningful for all SMEs. Further researchers may try to generalize the finding of this research.

ACKNOWLEDGEMENT

This research would not have been possible without support and research fund given by Iranian Industrial Parks Organization.

REFERENCES

Alam G (2009). The role of science and technology education at network age population for sustainable development of Bangladesh through human resource advancement. Sci. Res. Essays, 4(11): 1260-1270.

Analoui F, Karami A (2002). How chief executives' perception of the environment impacts on company performance. J. Manage. Dev., 21(4): 290-305.

Analoui F, Karami A (2003). Strategic management in small and medium enterprises: Cengage Learning.

Analoui F, Labbaf H, Noorbakhsh F (2000). Identification of clusters of managerial skills for increased effectiveness: the case of the steel industry in Iran. Int. J. Train. Dev., 4(3): 217-234.

AnjomShoa M (2010). mission report. Rafsanjan: Industrial park organuzation of Iran.

Barnes D (2002). The manufacturing strategy formation process in small and medium-sized enterprises. J. Small Bus. Enterp. Dev., 9(2): 130-149.

Chan S, Foster, M. (2001). Strategy formulation in small business: The Hong Kong experience. Int. Small Bus. J., 19(3): 56.

Colak M (2010). Investigati on of the efficiency of the furniture industry in Turkey. Sci. Res. Essays, 5(8): 742-749.

Collins M (2010). The effect of psychological contract fulfillment on manager turnover intentions and its role as a mediator in a casual, limited-service restaurant environment. Int. J. Hosp. Manage., 36: 356-373.

Cornell B (2003). The information that boards really need. MIT Sloan Manage. Rev., 44(3): 71-76.

Ebrahim N, Ahmed S, Taha Z (2009). Virtual R and D teams in small and medium enterprises. Sci. Res. Essays, 4(13): 1575-1590.

Etzioni A (1964). Modern organisations. Eaglewood Cliffs, New York.

FAO (2007). Top production - pistachio. http://faostat.fao.org/site/339/default.aspx Retrieved 08, 2010

Ghaderi H, Darestani S, Leman Z, Ismail M (2010). Development of a soft network model to improve supply chain management performance of SMEs. Sci. Res. Essays, 5(13): 1759-1764.

Ghosh D (2005). Alternative measures of managers' performance, controllability, and the outcome effect. Behav. Res. Account., 17: 55.

Hambrick D, Mason P (1984). Upper echelons: The organization as a reflection of its top managers. Acad. Manage. Rev., 9(2): 193-206.

Hitt M, Tyler B. (1991). Strategic decision models: Integrating different perspectives. Strateg. Manage. J., 12(5): 327-351.

IPO (2010). Annual report. Kerman: industrial park organization of Iran.

Irfan S, Mohsin M, Yousaf I (2009). Achieving Service Quality Through its Valuable Human Resources: An Empirical Study of Banking Sector of Pakistan. World Appl. Sci. J., 7(10): 1222-1230.

Kao C, Hung H (2007). Management performance: An empirical study of the manufacturing companies in Taiwan. Omega, 35(2): 152-160.

Karami A (2005). An exploration of the chief executive officers' (CEOs') perception of strategic management process: the case of British high-tech SMEs. J. Corp. Ownersh. Control, 2(4): 62-70.

Karami A, Analoui F, Kakabadse N (2006). The CEOs' characteristics and their strategy development in the UK SME sector. J. Manage. Dev., 25(4): 316-324.

Koohi I (2008). Assessment of Shared Knowledge Using Balanced Scorecard. World Appl. Sci., J., 4(6): 853-859.

Koohi I (2010). Consideration of the Effectiveness of Common Indicators in Codification of Iran's Meteorology Organization Strategic Programs. World Appl. Sci. J., 8(6): 853-859.

Koziol J (1993). Probability plots for assessing multivariate normality. Statistics, 42(2): 161-173.

Leonidou L, Katsikeas C, Piercy N (1998). Identifying managerial influences on exporting: past research and future directions. J. Int. Mark., 6(2): 74-102.

Metts G (2007). Measuring the effectiveness of managerial action in SMEs. Manage. Res. N., 30(12): 892-914.

Metts G (2008). The Role of Adaptive Decision Making in Resource Choices among SMEs. (formerly J. Collect. Negot. Publ. Sector). J. Collect. Negot., 32(2): 97-115.

Mintzberg H (1994). Strategy making in three models. J. Bus. Res., 36: 15-23.

Muhammad N, Jantan M, Taib F (2009). Environmental scanning and investment decision quality. Manage. Res. N., 32(12): 1117-1129.

Norburn D, Birley S (1988). The top management team and corporate performance. Strateg. Manage. J., 9(3): 225-237.

O'Regan N, Sims M, Gallear D (2008). Leaders, loungers, laggards. Management. 19(1): 6-21.

Odiorne G (1987). Measuring the unmeasurable: setting standards for management performance. Bus. Horiz., 30(4): 69-75.

Rajgopal S, Venkatachalam M, Kotha S (2002). Managerial actions, stock returns, and earnings: the case of business-to-business internet firms. J. Account. Res., 40(2): 529-556.

Ruzzier M, Antoncic B, Hisrich R, Konecnik M. (2007). Human capital and SME internationalization: A structural equation modeling study. Canad. J. Admin. Sci., 24(1): 15-29.

Shook C, Ketchen JD, Hult G, Kacmar K (2004). An assessment of the use of structural equation modeling in strategic management research. Strat. Manage. J., 25(4): 397-404.

Sorooshian S (2008). Evaluation of GC project on pistachio industry. Islamic Azad University, Iran.

Sorooshian S, Norzima Z (2010). Structural modeling of entrepreneurs effectiveness. WASJ, 10(8): 923-929.

Steers R (1975). Problems in the measurement of organizational effectiveness. Adm. Sci. Q., 20(4): 546-558.

Toegel G, Conger J (2003). 360-degree assessment: Time for reinvention. Acad. Manage. Learn. Educ., 297-311.

Webb R, Luft J (2004). Managers' Commitment to the Goals Contained in a Strategic Performance Measurement System Discussion of" Managers' Commitment to the Goals Contained in a Strategic Performance Measurement System". Contemp. Account. Res., 21(4): 925-964.

Woo C, Willard G (1983). Performance representation in strategic management research: Discussions and recommendations.

Zammuto R (1984). A comparison of multiple constituency models of organizational effectiveness. Acad. Manage. Rev., pp. 606-616.